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Administrator,

ORD senior leadership will participate in the ECOS Fall Meeting, September 11-12, in Jackson Hole, Wyoming on *Bright Ideas: States Leading the Way*, where 46 states are now registered. Bob Kavlock and Jennifer Orme-Zavaleta will discuss ORD's collaborative work with states at the Environmental Research Institute of the States (ERIS) Board Meeting, September 12, including follow up from the ERIS Board-EPA joint meeting in Oklahoma this past July, and new risk communication pilots under the EPA-ECOS-ASTHO Memorandum of Agreement.

Hot issues

ORD supports Hurricane Harvey response
In addition to its roles on the Policy Coordination Council and the National Incident Coordination Team, ORD is deploying its technical expertise via our RACER Reachback Capability to the response effort. Specifically, ORD has been requested to assist with (1) identification of toxicity values for 15 chemicals released into the environment as a result of the Hurricane/flooding (2) deploying a method developed by ORD that uses webcams and QR codes to assist with accountability of the many EPA personnel in the field; (3) compiling readily available and rapid analytical methods and capabilities for characterizing flood water for microbials, chemicals and metals - the HQ EOC later used this product to build one of many fact sheets about EPA's capabilities; and (4) deployment of ORD staff to the HQ EOC's Public Information Officer and Watch Floor positions.

ORD continues PFAS support for NC DEQ
On August 28th, ORD met with North Carolina Department of Environmental Quality (NC DEQ), Region 4, and local health departments to present the results of PFAS sampling in the Cape Fear River Basin. These results showed that although there had been some improvement in GenX concentrations, there were some PFAS that showed no improvement. The Cape Fear River Basin sampling project, led by NC DEQ, emanated from ORD research published last fall and reported in the popular press this spring. NC DEQ recently issued a statement, *State orders Chemours to stop chemical releases, begins legal action and steps to suspend permit*, related to the findings of this study.

TSCA Support
ORD is working with OPPT to improve exposure estimates used in TSCA evaluations of both new and existing chemicals. A workshop focused on estimating exposures from consumer products is planned for September 13. Additional workshops are being planned to focus on occupational exposures and ambient (far-field) exposures.

Upcoming public events (look out 2 weeks)

Sampling to support Tire Crumbs Research

During the week of September 11th, the Centers for Disease Control and Prevention and ORD will be in Oregon to conduct research as part of the exposure portion of the *Federal Research Action Plan on Recycled Tire Crumb Used on Playing Fields and Playgrounds*. The research will take place at an athletic field and will focus on collecting data from people who maintain the fields and who regularly use the fields. Additional research will be conducted at an athletic field in Virginia later this fall.

Korean government delegates visiting EPA Cincinnati, September 19

Representatives from K-Water, the Korean government organization responsible for water quality, will visit EPA Cincinnati. They are interested in learning more about current research on water quality management and algal blooms in freshwater. They would also like to discuss opportunities for future collaborations between EPA and K-Water, including a potential memorandum of understanding. This is a follow-on to K-Water's visit to EPA in Cincinnati in 2016 arranged by the water cluster program.

<u>Last week Highlights (include good news)</u>

Water research webinars attracting thousands of participants

- The August 29 ORD/OW webinar on treatment and control for manganese and iron attracted **1,135** attendees from all 50 states (including 8 Tribal Nations and 7 EPA Regions), D.C., Puerto Rico, Canada, Greece, and Malaysia, and will provide over 830 continuing education contact hours. ORD and OW presented on the simultaneous removal of arsenic, iron, ammonia, and manganese by biological treatment.

- The August 30 water research webinar attracted **1,035** attendees from all 50 states (including 13 Tribal Nations and 9 EPA Regions), D.C., Puerto Rico, Canada, Greece, and Nepal. Over 700 certificates of attendance were provided. ORD and the University of Maryland discussed research on environmental stressors and management practices impacting global water quantity and quality and the role of ecosystem restoration and management in securing and improving water resources and related ecosystem services.

Technical Support to Region 9

Since September 5, ORD has been providing technical support to Region 9 to evaluate the U.S. Navy's Red Hill Bulk Fuel Storage Facility on Oahu, Hawaii. In response to a 2014 fuel leak at the facility, the Navy has been developing a model for groundwater flow and impacts from facility fuel releases. ORD will evaluate the model parameters and assumptions to assist Region 9 and Hawaii.

Lead Support

- **Update on Galesburg, IL, lead service line replacement efforts.** On September 5, ORD participated in a call with Region 5 to discuss project status with regard to corrosion control and lead pipe removal. Participants also discussed potential future actions and efforts to work with the community, including public meetings. Region 5 plans to meet with Illinois EPA to discuss potential future actions.

- **Call with Region 8 and City of Denver on corrosion control study, September 5:** ORD participated in a call with Region 8 and representatives from the City of Denver to discuss data collected from Denver Water's optimal corrosion control treatment lead pilot plant. The city is conducting a Lead and Copper Rule pilot plant study that began after a 2012 action level exceedance. They presented their corrosion control study results during the call. We anticipate continued dialogue as the City of Denver, Region 8, and the state decide on what strategy the city will implement for lead reduction and what additional studies they may perform.

- **Technical assistance on Pittsburgh, PA, lead issues:** ORD continues to provide technical support to the City of Pittsburgh on lead in drinking water. We have provided guidance on designs of pipe rigs for corrosion control studies and on pipe scale analyses. ORD was also contacted by Pittsburgh Water and Sewer Authority (PWSA) on epoxy and plastic linings as alternatives to physical lead pipe replacement. We expect further discussions to follow and will coordinate with Region 3.

Publications

- **Sample processing approach for detection of ricin in surface samples:** With several ricin contamination incidents reported over the past decade, rapid and accurate methods are needed for environmental sample analysis, especially after decontamination. In this study, a sample processing method was developed for common surface sampling devices to improve the limit of detection and avoid false negative/positive results for ricin analysis.

- **High-Throughput methods for estimating food exposures to chemicals from food contact substances:** ORD scientists are co-authors on an article published last week in Environment International. The article, _High-throughput dietary exposure predictions for chemical migrants from food contact substances for use in chemical prioritization,_ uses a high-throughput framework for estimating aggregate exposures to chemicals from multiple pathways. Under this framework, the authors demonstrate methods for estimating high-throughput exposures to chemicals migrating into food from food contact substances. These methods can be used to refine aggregate exposure predictions used in risk-based chemical priority–setting.

- **Market basket analysis used to identify chemical combinations in U.S. population:** ORD scientists recently published an article in Environmental Health Perspectives, _A Method for Identifying Prevalent Chemical Combinations in the U.S. Population._ The authors demonstrate a method for identifying the chemical mixtures that are most prevalent in humans. They used the market basket analysis technique, _frequent itemset mining,_ to analyze biomonitoring data in order to identify combinations of chemicals that frequently co-occur in people. They identified 90 chemical combinations with relatively few chemicals that occur in at least 30% of the U.S. population. They also identified three super combinations with many more chemicals that occur in a small proportion of the U.S.